Complete Summary

TITLE

Stroke: percent of ischemic stroke patients with LDL greater than or equal to 100 mg/dL, or LDL not measured, or who were on a lipid-lowering medication prior to hospital arrival, who are prescribed a statin medication at hospital discharge.

SOURCE(S)

Specifications manual for national hospital inpatient quality measures, version 3.0b. Centers for Medicare & Medicaid Services (CMS), The Joint Commission; 2009 Oct. various p.

Measure Domain

PRIMARY MEASURE DOMAIN

Process

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the Measure Validity page.

SECONDARY MEASURE DOMAIN

Does not apply to this measure

Brief Abstract

DESCRIPTION

This measure* is used to assess the percentage of ischemic stroke patients with low-density lipoprotein (LDL) greater than or equal to 100 mg/dL, or LDL not measured, or who were on a lipid-lowering medication prior to hospital arrival, who are prescribed a statin medication at hospital discharge

*This is a Joint Commission only measure.

RATIONALE

An elevated serum lipid level has been a well-documented risk factor for coronary artery disease (CAD) and reflects an organ-specific manifestation of atherosclerosis which is a disease process that can affect the heart and the major and minor branches of the arterial tree. The reduction of low-density lipoprotein

(LDL) cholesterol, through lifestyle modification and drug therapy when appropriate, is recommended for the prevention of myocardial infarction and other major vascular events for patients with CAD (or coronary risk equivalent conditions) according to the National Cholesterol Education Program's Adult Treatment Panel III (NCEP ATP III) Guidelines. Recently, there has been an increased focus on the detection of patients with these risk factors when they present with other manifestations of atherosclerosis, and assuring that these patients are treated with lipid lowering medication if they meet NCEP ATPIII guidelines. While symptomatic carotid artery disease is one of the recognized coronary disease risk equivalents that qualify patients for treatment under ATPIII, there was little data until recently about the role of lipid lowering to prevent recurrent stroke or major vascular events in patients who presented with atherosclerotic stroke but did not otherwise qualify for treatment under ATPIII. The Stroke Prevention by Aggressive Reduction in Cholesterol Levels (SPARCL) study examined the effects of statins to lower LDL cholesterol in patients with stroke or transient ischemic attack (TIA) of atherosclerotic origin who had no other reason for taking lipid lowering therapy (i.e., they were without prior CAD or risk equivalent conditions), and had a fasting LDL greater than or equal to 100 mg/dL. The trial convincingly demonstrated that intensive lipid lowering therapy using statin medication was associated with a dramatic reduction in the rate of recurrent ischemic stroke and major coronary events. The treatment was well tolerated and cost effective. As a result, intensive lipid lowering therapy through use of a statin medication is now recommended for all patients with stroke or TIA of atherosclerotic origin who have an LDL greater than or equal to 100 mg/dL (or with LDL less than 100 mg/dL due to being on lipid lowering therapy prior to admission).

Based on these guidelines, all patients with ischemic stroke or TIA should have lipid profile measurement performed within 48 hours of admission unless results are available from within the past 30 days. A large body of evidence suggests that non-fasting lipid levels drawn in the first 48 hours after a major vascular event are reliable predictors of baseline lipid profiles, but after that time they may become unreliable. It is recommended that all patients with ischemic stroke or TIA with coronary heart disease or symptomatic atherosclerotic disease who have an LDL greater than or equal to 100 mg/dL (or with LDL less than 100 mg/dL due to being on lipid lowering therapy prior to admission) should be treated with a statin, The target goal for cholesterol lowering is an LDL-c level of less than 100 mg/dL. An LDL-c less than 70 mg/dL is recommended for very high-risk persons with multiple risk factors. For patients with stroke of atherosclerotic origin, intensive lipid lowering therapy with statins should be initiated in those who have an LDL greater than or equal to 100 mg/dL (or with LDL less than 100 mg/dL due to being on lipid lowering therapy prior to admission).

PRIMARY CLINICAL COMPONENT

Stroke; low-density lipoprotein (LDL); statin

DENOMINATOR DESCRIPTION

Ischemic stroke patients with a low-density lipoprotein (LDL) greater than or equal to 100 mg/dL, or LDL not measured, or who were on a lipid-lowering

medication prior to hospital arrival (see the related "Denominator Inclusions/Exclusions" field in the Complete Summary)

NUMERATOR DESCRIPTION

Ischemic stroke patients prescribed statin medication at hospital discharge

Evidence Supporting the Measure

EVIDENCE SUPPORTING THE CRITERION OF QUALITY

- A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence
- A formal consensus procedure involving experts in relevant clinical, methodological, and organizational sciences

NATIONAL GUIDELINE CLEARINGHOUSE LINK

- Guidelines for the early management of adults with ischemic stroke. A guideline from the American Heart Association/American Stroke Association Stroke Council, Clinical Cardiology Council, Cardiovascular Radiology and Intervention Council, and the Atherosclerotic Peripheral Vascular Disease and Quality of Care Outcomes in Research Interdisciplinary Working Groups.
- (1) Guidelines for prevention of stroke in patients with ischemic stroke or transient ischemic attack. (2) Update to the AHA/ASA recommendations for the prevention of stroke in patients with stroke and transient ischemic attack.

Evidence Supporting Need for the Measure

NEED FOR THE MEASURE

Use of this measure to improve performance

EVIDENCE SUPPORTING NEED FOR THE MEASURE

Adams RJ, Albers G, Alberts MJ, Benavente O, Furie K, Goldstein LB, Gorelick P, Halperin J, Harbaugh R, Johnston SC, Katzan I, Kelly-Hayes M, Kenton EJ, Marks M, Sacco RL, Schwamm LH, American Heart Association, American Stroke Association. Update to the AHA/ASA recommendations for the prevention of stroke in patients with stroke and transient ischemic attack. Stroke2008 May;39(5):1647-52. [10 references] PubMed

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Craig SR, Amin RV, Russell DW, Paradise NF. Blood cholesterol screening influence of fasting state on cholesterol results and management decisions. J Gen Intern Med2000 Jun;15(6):395-9. PubMed

Feinberg WM, Albers GW, Barnett HJ, Biller J, Caplan LR, Carter LP, Hart RG, Hobson RW 2nd, Kronmal RA, Moore WS, et al.. Guidelines for the management of transient ischemic attacks. From the Ad Hoc Committee on Guidelines for the Management of Transient Ischemic Attacks of the Stroke Council of the American Heart Association. Circulation1994 Jun;89(6):2950-65. PubMed

Gore JM, Goldberg RJ, Matsumoto AS, Castelli WP, McNamara PM, Dalen JE. Validity of serum total cholesterol level obtained within 24 hours of acute myocardial infarction. Am J Cardiol1984 Oct 1;54(7):722-5. PubMed

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Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III) final report. Circulation2002 Dec 17;106(25):3143-421. PubMed

Van Dis FJ, Keilson LM, Rundell CA, Rawstron MW. Direct measurement of serum low-density lipoprotein cholesterol in patients with acute myocardial infarction on admission to the emergency room. Am J Cardiol1996 Jun 1;77(14):1232-4. PubMed

Weiss R, Harder M, Rowe J. The relationship between nonfasting and fasting lipid measurements in patients with or without type 2 diabetes mellitus receiving treatment with 3-hydroxy-3-methylglutaryl-coenzyme A reductase inhibitors. Clin Ther2003 May;25(5):1490-7. PubMed

State of Use of the Measure

STATE OF USE

Current routine use

CURRENT USE

Accreditation
Collaborative inter-organizational quality improvement
Internal quality improvement

Application of Measure in its Current Use

CARE SETTING

Hospitals
Managed Care Plans

PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Measure is not provider specific

LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

TARGET POPULATION AGE

Age greater than or equal to 18 years

TARGET POPULATION GENDER

Either male or female

STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

Characteristics of the Primary Clinical Component

INCIDENCE/PREVALENCE

Among adults age 20 and older, the estimated prevalence of stroke in 2005 was 5,800,000 (about 2,300,000 males and 3,400,000 females). Each year about 780,000 people experience a new or recurrent stroke. About 600,000 of these are first attacks, and 180,000 are recurrent attacks. On average, every 40 seconds someone in the United States has a stroke.

EVIDENCE FOR INCIDENCE/PREVALENCE

American Heart Association. Heart disease and stroke statistics - 2008 update. Dallas (TX): American Heart Association; 2008. 43 p.

ASSOCIATION WITH VULNERABLE POPULATIONS

Each year, about 60,000 more women than men have a stroke. Men's stroke incidence rates are greater than women's at younger ages but not at older ages. Blacks have almost twice the risk of first-ever stroke compared with whites.

EVIDENCE FOR ASSOCIATION WITH VULNERABLE POPULATIONS

American Heart Association. Heart disease and stroke statistics - 2008 update. Dallas (TX): American Heart Association; 2008. 43 p.

BURDEN OF ILLNESS

Stroke accounted for about one of every 16 deaths in the United States in 2004. When considered separately from other cardiovascular diseases, stroke ranks No. 3 among all causes of death, behind diseases of the heart and cancer. Among persons ages 45-64, 8 to 12 percent of ischemic strokes and 37 to 38 percent of hemorrhagic strokes result in death within 30 days.

Stroke is a leading cause of serious, long-term disability in the United States. The median survival time following a first stroke is 6.8 years for men and 7.4 years for women age 60-69 years-old. At age 80 and older, it is 1.8 years for men and 3.1 years for women.

EVIDENCE FOR BURDEN OF ILLNESS

American Heart Association. Heart disease and stroke statistics - 2008 update. Dallas (TX): American Heart Association; 2008. 43 p.

UTILIZATION

Unspecified

COSTS

The estimated direct and indirect cost of stroke for 2008 is $65.5 billion. The mean lifetime cost of ischemic stroke in the United States is estimated at $140,048. This includes inpatient care, rehabilitation, and follow-up care necessary for lasting deficits.

EVIDENCE FOR COSTS

American Heart Association. Heart disease and stroke statistics - 2008 update. Dallas (TX): American Heart Association; 2008. 43 p.

Institute of Medicine National Healthcare Quality Report Categories

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness
Safety

Data Collection for the Measure

CASE FINDING

Users of care only

DESCRIPTION OF CASE FINDING

Stroke inpatients discharged with a specified International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Principal Diagnosis Code for ischemic stroke (see the "Denominator Inclusions/Exclusions" field)

DENOMINATOR SAMPLING FRAME

Patients associated with provider

DENOMINATOR INCLUSIONS/EXCLUSIONS

Inclusions

- Stroke patients with an International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Principal Diagnosis Code for ischemic stroke as listed in Appendix A of the specifications manual
- Patients who were on a lipid-lowering medication prior to hospital arrival as defined in Appendix C, Table 1.6
- Patients with low-density lipoprotein-cholesterol (LDL-c) not measured
- Patients with LDL-c greater than or equal to 100 mg/dL

Exclusions

- Patients less than 18 years of age
- Patients who have a Length of Stay greater than 120 days
- Patients with *Comfort Measures Only* documented
- Patients enrolled in clinical trials
- Patients admitted for *Elective Carotid Intervention*
- Patients without *Evidence of Atherosclerosis*
- Patients discharged/transferred to another hospital for inpatient care
- Patients who left against medical advice or discontinued care
- Patients who expired
- Patients discharged/transferred to a federal health care facility
- Patients discharged/transferred to hospice
- Patients with a *Reason For Not Prescribing Statin Medication at Discharge*

RELATIONSHIP OF DENOMINATOR TO NUMERATOR

All cases in the denominator are equally eligible to appear in the numerator

DENOMINATOR (INDEX) EVENT

Clinical Condition
Institutionalization
Therapeutic Intervention

DENOMINATOR TIME WINDOW

Time window brackets index event

NUMERATOR INCLUSIONS/EXCLUSIONS

Inclusions
Ischemic stroke patients prescribed statin medication at hospital discharge

Exclusions
None

MEASURE RESULTS UNDER CONTROL OF HEALTH CARE PROFESSIONALS, ORGANIZATIONS AND/OR POLICYMAKERS

The measure results are somewhat or substantially under the control of the health care professionals, organizations and/or policymakers to whom the measure applies.

NUMERATOR TIME WINDOW

Institutionalization

DATA SOURCE

Administrative data
Medical record

LEVEL OF DETERMINATION OF QUALITY

Individual Case

PRE-EXISTING INSTRUMENT USED

Get With The Guidelines (GWTG, American Heart Association/American Stroke Association) electronic tool may be used for data collection.

Computation of the Measure

SCORING

Rate

INTERPRETATION OF SCORE

Better quality is associated with a higher score

ALLOWANCE FOR PATIENT FACTORS

Unspecified

STANDARD OF COMPARISON

Internal time comparison

Evaluation of Measure Properties

EXTENT OF MEASURE TESTING

Unspecified

Identifying Information

ORIGINAL TITLE

STK-6: discharged on statin medication.

MEASURE COLLECTION

National Hospital Inpatient Quality Measures

MEASURE SET NAME

Stroke

SUBMITTER

Centers for Medicare & Medicaid Services
Joint Commission, The

DEVELOPER

Centers for Medicare & Medicaid Services/The Joint Commission

FUNDING SOURCE(S)

All external funding for measure development has been received and used in full compliance with The Joint Commission's Corporate Sponsorship policies, which are available upon written request to The Joint Commission.

COMPOSITION OF THE GROUP THAT DEVELOPED THE MEASURE

The composition of the group that developed the measure is available at: http://www.jointcommission.org/CertificationPrograms/PrimaryStrokeCenters/stroke_advisory_panel.htm.

FINANCIAL DISCLOSURES/OTHER POTENTIAL CONFLICTS OF INTEREST

Expert panel members have made full disclosure of relevant financial and conflict of interest information in accordance with the Joint Commission's Conflict of Interest policies, copies of which are available upon written request to The Joint Commission.

ENDORSER

National Quality Forum

ADAPTATION

Measure was adapted from another source.

PARENT MEASURE

Discharged on Cholesterol-Reducing Medication [The Joint Commission]

RELEASE DATE

2009 Apr

MEASURE STATUS

This is the current release of the measure.

SOURCE(S)

Specifications manual for national hospital inpatient quality measures, version 3.0b. Centers for Medicare & Medicaid Services (CMS), The Joint Commission; 2009 Oct. various p.

MEASURE AVAILABILITY

The individual measure, "STK-6: Discharged on a Statin Medication," is published in "Specifications Manual for National Hospital Inpatient Quality Measures." This document is available in Portable Document Format (PDF) from The Joint Commission Web site. Information is also available from the Centers for Medicare & Medicaid Services (CMS) Web site. Check The Joint Commission Web site and CMS Web site regularly for the most recent version of the specifications manual and for the applicable dates of discharge.

NQMC STATUS

The measure developer informed NQMC that this measure was updated on April 30, 2009 and provided an updated version of the NQMC summary. This NQMC summary was updated accordingly by ECRI Institute on September 9, 2009.Â The information was verified by the measure developer on November 9, 2009.

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Date Modified: 12/7/2009